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ABSTRACT

This paper discusses a survey undertaken to determine conceptions of psychology held by college students in an introductory social science course. Twenty-nine students were queried at the beginning of the course regarding the open-ended question, "If Esso garages were to invite a psychologist to improve the efficiency of petrol pump attendants, what sort of things would the psychologist do?" Review of transcripts of tape-recorded responses indicated that answers could be categorized into nine distinct conceptions of psychology and the role of psychologists. The nine conceptions were: (1) personnel officers/career guidance counselors, (2) arbitrators, (3) witch doctors, (4) ergonomists (organization and management consultants), (5) community workers, (6) environmental psychologists, (7) market researchers, (8) social psychologists, and (9) motivators. An overview of these responses indicated that students in the introductory social science course perceived psychology as a discipline based on processes which are subjective and intuitive rather than objective and scientific. Specifically, no students mentioned any areas of activity related to experimental psychology which embodied scientific method. Even those students who characterized psychologists as people who collected evidence and wrote it down--the market researcher conception--failed to recognize that there was any systematic use made of that evidence. One implication of this study is that educators will improve students' understandings of key ideas in psychology if they take into account the nature of pre-course conceptions of the discipline among students when designing curriculum and setting course objectives. (DB)

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AN EXAMPLE OF THE QUALITY OF STUDENTS' UNDERSTANDING:

INITIAL CONCEPTIONS OF PSYCHOLOGY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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ABSTRACT

Students new to the Open University and studying D101, the Foundation Social Science course, were questioned about their conception of psychology. The different conceptions students held are described. The implications of this kind of evidence for teaching are discussed.

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An Example of the Quality of Students' Understanding:

Initial Conceptions of Psychology

The Study Methods Group's investigations into how students learn about social science have involved assertaining what students learnt from D101, the Open University's Foundation course: Making Sense of Society. In order to do this the Group talked with several authors of the course, and with the course team responsible for running the course and devising assessment questions. We asked them to identify the key concepts on a particular part of the course was trying to get across. It was not immediately clear from the course materials, lists of aims and objectives, or assessment questions, what these key concepts were, and the authors themselves had some difficulty in identifying them. The course team had even more difficulty in agreeing that these concepts were indeed the ones the course was attempting to teach. However there was general agreement that some of the key concepts in the course were to do with what social science disciplines themselves consisted of. For example in the section of the course which we were focussing on, Block 5 on 'Work', the first Unit, Unit 16a, attempts to get across a conception of psychology's approach to social science issues in general as much as to teach about the psychology of work. We were told that it was very important that students developed a clear conception of psychology. We decided that to assertain what students learnt from D101 it would make sense to ask about, amongst other things, what their conception of psychology was, and to do this both before and after the course, in order to see in what way these conceptions changed.

This paper describes students' initial conceptions of psychology, to find out what a student believes psychology to be it isn't very effective to simply ask "What is Psychology?" because one either gets blank stares in reply, or cliched definitions picked up from book titles or T.V. (e.g. "it's the science of mental life, innit?") neither of which tells one much about their own conception of psychology. Instead we formulated the question, with the agreement of the author of Unit 16a,: "If Esso garages were to invite a

psychologist in to improve the efficiency of petrol pump attendants, what sort of things would the psychologist do?". We asked this question in face to face interviews of 29 students new to the OU who were about to start D101 and asked non-directive probing questions (e.g. "Can you explain that?", "Is there anything else?") until the student could tell us no more. Their interviews were tape-recorded and then transcribed in full. We then read these transcripts to identify the context of students' answers. This methodology is similar to that used by Dahlgren & Marton (1978) to describe the content of students' learning on an economics course. (The research methodology is described in more detail in Morgan, Gibbs & Taylor, 1980). How did these students appear to conceptualise the role of psychologists? Looking at such transcripts takes a long time. Answers tend to be incoherent and muddled, and when terms are mentioned this does not necessarily indicate any understanding of the meaning of the terms. However, talking with a comparative stranger into a tape recorder about ideas and concepts one hasn't yet studied about is not an easy task and we were impressed by how well some students coped with this. The students cooperated very fully and we are very grateful for their thoughtful and sincere attempts to answer our challenging questions.

We eventually managed to characterise students answers in a way we felt happy with and which seemed to do justice to their variety and richness. We identified nine distinct conceptions of psychologists held by the students. We have here given a description of each conception with quotes from students to illustrate these. Their order is not significant. The names we have given to the conceptions are our own, and were <u>not</u> used by students.

<u>Personnel officer/careers guidance counsellor</u>

The psychologist is seen as someone concerned with whether the right person is in the job - this may be seen from the <u>personnel</u> view - what sort of individual would make the best petrol pump attendant and meet its unique demands best, or from the <u>careers guidance</u> view - whether the individual is happy in his job or would rather do something else. The linking conception is that psychologists are

concerned with individual differences, the different demands jobs make, and the matching up of this variation.

S. "Yes, well I don't think what else he would do except interview them to find out if they liked being petrol pump attendants, and suggest they do something else if they didn't."

I. "When you say that the psychologist would look at the kind of person they were ....."*

S. "Yes er that's vague isn't it? Um - their intelligence level. Um, their interests. Why they are petrol pump attendants as opposed to being anything else. Er because that could well possibly to do with it, if they'd rather be, if they had more, sort of aspirations. That's what I mean by the kind of person."

S. "... probably he'd transfer the people who really weren't suited to that kind of job."

S. "... a psychologist could make an overall decision about the ideal petrol pump attendant .... and finding .... people to suit that particular way of thinking."

S. "... but obviously if you're career minded, if you want to get on to something else and the job only stopped at being a petrol pump attendant you're going to be the wrong person for it em .. .. and I suppose if you have a skeleton of the ideal petrol pump attendant from the point of view of the garage proprietor and ... I suppose from the petrol pump attendant what their sort of ideal sort of work would be."

S. "... I would have thought he would have done his best to get people who actually suited it .... if he were going to look at them before they were hired I'd say the same thing in a way. He would look for people who obviously liked that sort of job. People who could stand a fair amount of rudeness which they must have in that sort of job and probably with some interest in cars ....."

Arbitrator

Psychologists are seen as acting like an independent 'honest broker' - talking to management and staff and helping to sort out problems between them - rather like an arbitration service.

S. ".. to communicate with both sides really wouldn't it? And try to solve problems like that."

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* In these extracts from transcripts, dots represents silences: one dot represents about two seconds.

S. ".. the pump attendants may have a long standing argument over something with the management and an outsider like a psychologist may be able to explain the problems of the management to the [illegible]ers and the other way round and sort out a reasonable solution."

S. "There might be grievances which management and attendants can't sort out themselves and the psychologist might be able to point out each others point of view and might be able to sort-out a compromise."

Witch doctor

Psychologists are seen as having the ability to manipulate peoples actions, intentions or motivations by "magical" methods: these methods may be described as manipulation of the sub-conscious, subliminal methods (e.g. subliminal advertising) and indoctrination. These conceptions ascribe special powers to psychologists:

S. "I suppose the psychologist would be more interested in the mind - how to make them want to work."

S. ".. all I know is related to where I'm working they've started playing stupid music every day to - perk you up .... psychologically it must do something for you - psychologically - deep down in your subconscious it must be doing something but in your conscious mind you're saying 'what a load of rubbish'. But you know, subconsciously it might be getting to you, you know, like subliminal advertising where they substitute a couple of frames, you know, it might be a crappy film but it sells dog food, you know."

Ergonomist

Psychologists are seen as concerned with the design and layout of the garage and the design and use of the pumps. This may be described as "work study" or "O and M" (organisation and management).

S. ".. how far would you put the petrol pump attendants away from the pumps and how many feet would he have to walk and how heavy are the pumps and that sort of thing."

Community worker

Psychologists are concerned with how the organisation or garage works together - whether there is a sense of belonging, community and loyality. The psychologist is seen as having the task of creating group identity and cohesion, of improving 'teamwork'.

S. ".. I think you're more onto ... where he fits into Esso garages as a whole - whether he thinks it's a great organisation .... I think he would have to question the petrol pump attendants on ... the attendants as a group and what they think of each other really ... I could imagine that they'd say 'well Esso garages seem so remote that we don't feel anything towards them" .... Well they'd have to do a bit of indoctrination saying - "you really matter" ....

Environmental Psychologist

The psychologist is seen as concerned with the effects of physical conditions on work efficiency - whether the pump attendant is cold, or wet, depressed by the gloomy boring environment and cramped conditions, and so on. The effect on efficiency is seen in subjective terms - mediated by how the attendant feels - rather than in objective (e.g. physiological) terms.

S. ".. try to find out how their environment affects their work or something. If they had a warm room or soemthing to sit in when they are not working."

S. "If they were happier I think they'd work more efficiently. Things like having a cover over the top whilst they fill the cars, so they didn't stand out in the pouring rain whilst they did it, and things like that."

S. "Well I think a lot of the problems at work derive from this, the working conditions. I think if people work in reasonable conditions with decent facilities for washing, cooking, that sort of thing ... I think they're more contented as a worker."

Market researcher

The psychologist is identified as someone who asks questions, (perhaps using a tape recorder) hands out questionnaires, and then writes reports (possibly making recommendations but more often simply descriptive). What the questions are about is oriented towards subjective feelings. There is no theoretical basis for the questions and no systematic use of answers. It all just adds up to a general picture. The emphasis is on interviewing - simply asking questions.

S. "Interview the petrol pump attendants themselves, see if they can think of anything themselves."

S. "..he would interview the petrol pump attendants - to find out what their views were on what they were doing."

S. "He'd ask the attendants an enormous number of questions ... Em - he'd ask, I suppose about monotony in their work. What were the highlights of their day? How they felt on going home. Did they find it difficult to get up in the mornings get off to work?... Then I suppose he'd make out his report and that would be it."

S. "..then give them some sort of questionnaire to get at their job and their, eh, ideas about it. --- and make suggestions from that."

S. "He'd come and sit and interview them with a tape recorder for a start. Yes I think he'd talk to each of them first. Um - to find out - well which bits of their work they enjoyed and how they were tackling their work --- and if they liked doing it or if they didn't like doing it."

Social psychologist

Psychologists are concerned with how people get on with each other. The relationships between the boss and attendants, between attendants and customers, and amongst the attendants themselves are mentioned. The aspects of these relationships which are described vary from problems of authority to smiling, but mostly concern just 'getting on well', and 'friendliness'.

"He also has to find out, um the general atmosphere - among the ..... attendants as well. Whether they are friendly or - .... whether they are matey ..... whether - they just ignore each other and being unfriendly just working...."

Motivator

Psychologists motivate people. They interest people in what they are doing and so make them work harder. They use a variety of methods including financial incentive schemes, increasing the demands of the job, and social manipulation.

"..motivating the attendants to take an interest in their work - over and above - er picking up a weekly wage ... and I'm not quite sure how you'd go about motivating them - bonus payment for petrol delivered? - Not really the work of a psychologist - There must be more subtle ways of motivating...."

"..The psychologist would be looking for some way to motivate them.... Possibly some sort of money incentive. But to er - somehow he's got to get through to them that their job is quite important...."

There was also a category for ignorant conceptions. For example:

S. ".. no I'm not sure I can give a genuine answer to that. I really am not entirely sure what a sociologist is going to say."

I. "Psychologist."

S. "Psychologist, I'm sorry."

I. "Yeah."

S. "Same thing I think. Similar."

Commentary

There are several points we'd like to make about these conceptions, and they are primarily concerned with how adequate a conception of psychology all this adds up to.

Firstly, while these conceptions between them cover a very broad spectrum of psychology, few individuals had broad conceptions. It was much more common for an individual student to describe only one or two sorts of psychologist than to describe more, and no student describe them all. In fact, individual's conceptions were generally rather narrow and we would expect them to be somewhat taken aback to discover the range of things psychologist actually do.

Secondly there is a whole area of psychology missing from students' answers. There was no mention whatsoever of perception, cognition, memory, learning, attention, thinking, or indeed any recognisable synonym for anything to do with experimental psychology. A large proportion of the contents of what makes up DS261 (An Introduction to Psychology) and D305 (Cognitive Psychology) are outside these students' conceptions of what psychology consists of. So despite the apparent breadth of conceptions we found, there were also extreme limitations to them.

Another conception of psychologist which was missing was that of the psychometrician - the psychologist who measures and tests individuals - their abilities, personalities, cognitive style and so on. This is the most common role for practicing psychologists and the students were, with one exception, quite unaware of it. Psychophysiology was also not referred to, even implicitly. Why were these particular

sorts of conceptions missing?

We think the answer is very clear from students answers. They have a conception of the process of psychology which is almost without exception subjective and intuitive: humanistic or psychodynamic if you'd like to read rather a lot into their answers, but not objective and not scientific. There was a lack of any conception of psychology which embodied scientific method. There was no experimentation at all. No use of theory. No testing of hypotheses. Even measurement (in the form of measuring efficiency) was mentioned by only two students. It would have been surprising if the students had talked about the use of scientific method in an abstract way or even used the words experiment, hypothesis or theory. But they didn't suggest the crudest sort of before-and-after check on how the attendant's worked or even (with the two exceptions mentioned above) suggest obtaining an indication of the efficiency of the attendants at all. It seems likely that any activity undertaken to improve the efficiency of petrol pump attendants which was seen by the students as remotely systematic, objective or scientific would have been rejected as not what a psychologist would undertake. In fact several students did suggest somewhat systematic work-studies or incentive schemes and then reject them as not a psychologist's concern.

Even when students conceptualised psychologists are being concerned with the effect of physical characteristics of the environment - such as cold - this was not conceptualised in a positivistic way. The effect on efficiency was always seen as mediated by the feelings of the attendants - whether they felt unhappy about feeling cold for example rather than seeing efficiency as directly influenced by temperature.

From a variety of indications (including a number of years of tutoring DS261) we have gained the impression that many students are unhappy, even dismayed, to find the emphasis on scientific methodology and experimental psychology in OU Psychology courses, and so we think it important to explore their existing conceptions of the methodology of psychology.

Some students' conceptions reached extraordinarily subjective extremes. For example one student say psychologist as working by pure

empathy:

> "They would be looking -- sort of at the job subjectively um they would probably put themselves in the petrol pump attendant's position and think to themselves well you know "Why isn't this guy working very well?"."

It was very common to see psychologists as simply collecting evidence and writing it down - the 'market researcher' conception of psychologists. The lack of any systematic use of that evidence - especially in relation to hypotheses or theories about what was going on - was marked. Any analysis was post hoc, and characterised by a lack of any sort of organising principle. The observeable mechanisms whereby this occurred were referred to, however. For example:

I. "What would he do with that information when he collected it?"

S. "He would spend three years putting it in a report - He'd probably put it through a computer and make a recommendation."

Implications

We think the force of all this evidence is not that students understand very little, and so in teaching them about psychology one must start from a very basic and simple level. In contrast, overall students sometimes seem quite confident in an extraordinary range of notions about psychology, many of which are similar in important ways to what psychology really is. To simply start at a basic level is to ignore students' conceptions as much as to start at a sophisticated level. To take students conceptions into account involves recognising the form of their conceptions and the ways in which they are similar to and different from expert conceptions, and, perhaps most importantly in the case of students conceptions of psychology, what is missing.

This becomes obvious if one looks at how the discipline of psychology is introduced in D101 at present. The term 'psychological' is first mentioned on p.11 of Unit 1 and is associated with a list of feelings about being unemployed in a way which would confirm students preconceptions of psychology as a subjective discipline. What psychology as a subjective discipline. What psychology consists of is introduced for the first time on p.83, Unit 2: "A Psychological

Perspective" (on crime). But what such a perspective consists of is entirely implicit and there is little which would suggest to students that their existing conception is inadequate. What psychologists do is not tackled explicitly until Unit 16a. If it really is important for students to understand what the Social Science disciplines consist of, then we feel there is plenty of scope for addressing this issue explicitly and for using students existing conceptions as a starting point for teaching. Only by discussing psychology with reference to the forms of thought which students bring to bear to understand psychology will these preconceptions be mobilised and made liable to modification and change.

This approach is currently being taken by U204 ("Third World Studies") who have, as a first step, undertaken a study of students' existing conceptions of the Third World - of what "Development" means for example, and of how they understand the process of development and the relationship between the Third World and the West. The course teams' understanding of students' existing conceptions will hopefully enable them to write the course in a way which will engage student ideas, beliefs and values and so be most likely to change them instead of leaving them intact. This approach has also been taken by one D102 author who has used student's initial conceptions of capitalism, to introduce and discuss this concept. Students' initial conceptions of capitalism were revealed by the Study Methods Group asking students: "Is Britain capitalist?" and undertaking the same sort of analysis of their answers as has been described here for the analysis of student's conceptions of psychology.

By identifying the forms of thought within which students conceptualise the key ideas to be taught by a course, it would seem possible not only to provide a powerful strategy for teaching, but also framework for assessing what it is that students learn from the course which takes into account the nature of the changes in their conceptions.

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